

341 Years on the Tools:  
Ageism and Experiential Knowledge Gap  
Leading to Occupational Injustice

A Study on Barriers Injured Veteran Electricians Face When Retrained by WSIB for  
New Careers as Electrical Estimator  
or Inspector

March 18, 2015 ©  
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### **Abstract**

In this article, I develop an argument that the transition to new career opportunities for injured veteran electricians must be viewed in a fresh perspective, one that embraces the notion of occupational justice. The current retraining program offered by WSIB to injured veteran electricians for the role of Electrical Estimator or Inspector is not working for a host of reasons. Electricians love to work with their hands and form long-lasting occupational identities, as well as deep and rich social structures when employed as electricians. Veteran electricians who are injured on the job face serious barriers in their attempt to transition to a trade or job that does not include working with their hands, such as an estimator or inspector.

This study confirms and builds upon the literature on the serious challenges expert trades people have encountered when they attempt to make a voluntary career change to becoming qualified college teacher of trade apprentices (Hayes, 2013; James, 1997; Mealyea, 1989; Williams, 2010). Ageism, the lack of past knowledge and prior experience, personal traits and preferences, and clearly defined occupational identities all combine to create serious barriers to the ability of injured veteran electricians to secure positions as an electrical estimator or as a provincial inspector and leads to a condition called occupational injustice (Townsend & Wilcock, 2004).

The stories of pain, humiliation, loss, alienation, and suffering veteran electricians face as they attempt to seek gainful employment after serious injury is viewed through a phenomenological lens (Rehorick & Bentz, 2008; Van Mannen & Schein, 1997), in order to better share the lived experience of barriers to career change for these subject matter experts. Primary research for this study was conducted with 13 injured veteran electricians who were

forced to make late-career changes, where they faced the same challenges as voluntary career changers as well as many new and unique challenges.

### **Background of the Author**

Gavan Howe PhD (at dissertation) specializes in exploring the human and organizational factors involved in occupational death and injury for those employed in hazardous construction trades. He holds an MA in Leadership, an MA in Human Development, and is currently writing his doctoral dissertation exploring occupational death and injury amongst apprentices and licensed electrical workers. He has studied and researched occupational health and safety for those employed in dangerous construction trades for over a decade and has taught Occupational Health and Safety, Organizational Behaviour, and Organizational Development to diploma stream college students, and he currently teaches Marketing Research at Humber College in Toronto, Ontario. Gavan has conducted primary research on issues relating to the Tony Dean Commission, OCOT formation, licensing, electrician training, ratio hearings, and other human and organizational issues on behalf of CSA, ESA, ESFI, and for both the unionized and non-unionized electricians in Ontario and in British Columbia.

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## **Introduction**

Let me be clear, this research paper is not about the blame game because clearly there are merits to the existing return-to-work programs offered by the Province of Ontario, for some injured workers. However, the current dynamically complex system appears to fail when it comes to offering viable career alternatives for injured veteran electricians. Neither the time nor scope are available in this report to undertake a detailed analysis of the current back to work and retraining programs offered by the province nor to offer concrete solutions for change. Rather, 19 clarifying questions are raised, which if answered in an honest and open manner, might help guide the insurance industry, regulators, therapists, colleges, trainers, and the construction industry to join together to stop the occupational injustice being experienced by veteran electricians who suffer a debilitating occupational injury or illness.

When looking at retraining opportunities for injured veteran electricians, a look at occupational justice through the lens of the occupational identity development in the distinct social community of electricians, and difficulties experienced by non-injured trades people making voluntary career changes, is warranted and could assist with improved occupational justice in work transition outcomes for injured veteran electricians.

## **Occupational Justice**

Occupational justice “is a term that emphasizes the rights, responsibilities and liberties that enable the individual to experience health and quality of life through engagement in occupations” (Wolf, Ripat, Davis, Becker, & MacSwiggan, 2010, p. 15). It provides “a clear distinction between social justice and occupational justice by viewing the former as addressing social relations and conditions of life, while the later deals with what people do in their relationships and conditions for living” (Ryski and Arnold, 2005, para. 1). Further, they are

unequivocal: “Individuals, groups and communities experiencing *occupational injustice* are at great risk for ill health” (para. 3).

It is important to note that the participants in this study were already experiencing ill health in the form of a disability or illness serious enough to eliminate them from the occupation of electrician. The four forms of occupational injustice: occupational alienation, occupational deprivation, occupational marginalization, and occupational imbalance, as first noted by Townsend and Wilcock (2004), suggest that veteran electricians who suffer a career-altering injury or medical condition are at double jeopardy for ill health.

Occupational injustice can be mitigated to some extent by the occupational rights advocated by Townsend and Wilcock (2004, p. 80), as presented in Table 1.

Table 1

*Occupational Injustice versus Occupational Rights*

Occupational Injustice	Occupational Rights
Alienation	Right to experience occupation as meaningful and enriching
Deprivation	Right to develop through participation in occupations for health and social inclusion
Marginalization	Right to exert individual or population autonomy through choice of occupations
Imbalance	Right to benefit from fair privileges for diverse participation in occupations

Gupta (2012), writing on the notion of work and occupational injustice, stated, “Work as in paid employment is a social expectation and brings the benefits of social inclusion, acceptance, and identity” (p. 1). Gupta later quoted Asaba and Jackson as saying, “Occupational

science has focused on theory and research that explore the relationship between occupation and identities, particularly during transitions and disruptions that change the ways of doing” (p. 4).

Christenson (as cited in Gupta, 2012) theorized that:

Occupations are instrumental in shaping a person’s identity, and are hence impacted when individuals experience disfigurement or functional limitations due to injury or disease. . . . The competence or self-efficacy derived from the ‘doing’ of occupations underpins a person’s being and sense of worth. (p. 7)

Electricians are unique because the trade of electricity is unique. It is demanding, stressful, dangerous, and full of uncertainty in economic downturns, as electricians worry “where the next job will come from.” They are well-trained technical experts with a unique and specialized social and organizational culture. Make no mistake, it takes a certain kind of individual who, day in day out, works with the highly toxic substance called electricity. “Once a sparkie, always a sparkie,” as one participant noted.

### **The Occupational Identity of Electricians**

While conducting occupational health and safety research as well as organizational research on occupational risk over the past 10 years, I have interviewed over 400 electricians and those who work on, or near, electrical equipment (e.g., millwrights, HVAC technicians, elevator repair, service technicians, etc.). My research findings agreed with Gupta (2012), Ryski and Arnold (2005), Townsend and Wilcock (2004), and Wolf et al. (2010): namely, that electricians form distinct occupational identities and strong social communities. I argue these strong organizational socialization forces (Van Mannen & Schein, 1997) also help these specialized workers develop coping skills and heuristics, in order to deal with an ever-present risk of live electrical machinery, panels, or equipment.



As noted, electricians know full well the nature of this dangerous work, and overcoming one's fear of the highly toxic, invisible, odourless, and soundless substance called electricity is a necessary rite of passage in order to become an electrician. Apprentice electricians learn these skills under the tutelage of a large, diverse, and expert community of veteran electricians who, together, are dedicated to their training in the technical skills of the electrical trade. More importantly, they take the time and effort to show young apprentice electricians how to undertake safe work on the job. It was also noted that having three licensed journeymen supervising one apprentice is very important. As one participant noted, "Electricians have many different specialties, and they each have their own way of doing things." The risks of electrical work and how the community of electricians deal with these risks help to develop the distinct and unique occupational identity electricians embrace when they attain their Certificate of Qualification of C of Q—their electrician's license.

Electricians want and need to work with their hands; they thrive on and are highly motivated by intellectually solving complex problems, and then by executing them, they "plan the work, work the plan." These subject matter experts take an inordinate amount of pride in the finished product, whether it is laying pipe, installing a new panel, repairing an old one, getting a piece of mission-critical machinery back on line, wiring a sub-station, or wiring a new hospital. As another participant noted, they are the "go to guys and gals, the ones who get your power back up on Christmas Day or in the middle of an ice storm or blackout."

Electricians want very much to be electricians. Further, most of them have known this was the trade for them since their early youth. To be an electrician is their occupational identity, and it is a powerful one, making transition to a new trade an extremely difficult one for injured, veteran electricians. For electricians who possess decades of experience on the tools and who can

no longer work in *their* trade due to illness or injury and who cannot find gainful employment as an electrician *on the tools*, a condition arises called “occupational injustice” (Townsend & Wilcock, 2004, p. 76).

### **The Community of Electricians**

Electricians create a unique community and being an electrician is what defines and articulates the occupational identity of an electrician. This occupational identity generally does not include being something other than an electrician. There is rich literature on the serious difficulties trade workers face when attempting to transition to a new occupational identity, such as a teacher of apprentices (Gupta, 2012; Hayes, 2013; James, 1997; Mealyea, 1989; Townsend & Wilcock, 20014; Williams, 2010; Wolf et al., 2010). The literature described trade workers willingly attempting to transition. Imagine then, the difficulties veteran electricians face when they unwillingly attempt to transition to a new occupational identity.

Townsend and Wilcock (2004) noted, “Humans are occupational beings. Their existence depends on enablement of diverse opportunities and resources for participation in culturally-defined and health-building occupations” (p. 76). Further they stated, “People are occupational as well as social beings” (p. 79), and “individually or as members of particular communities, we have differing occupational needs, strengths, and potential which require different forms of enablement to flourish” (p. 80).

Scholars supported the findings of this study and confirmed that those who are employed as veteran electricians are deeply embedded in a particular community: one that is old, rich in history, tradition, unique customs, heuristics, and lore (Van Mannen & Schein, 1997). These heuristics also include how to deal with the hazardous substance called electricity. Electricity is invisible, odorless, and soundless, and it can be fatal upon contact. This community has clear

social structures, language, values, beliefs, norms, and behaviours, which deal with the danger and risk of electrocution (Howe, 2008, p. 9).

### **Electrician: A Dangerous Trade**

First, let us define the notions of dangerous work and a hazardous trade and how these facts may exacerbate the difficulty an injured veteran electrician encounters in finding a new, suitable occupation (SO) after injury or illness. The United States (US) Department of Labor and its Occupational Safety & Health Administration (OSHA) has developed a new moniker to describe the most dangerous trades based on incidence of death and injury. They are called “The Fatal Four” (US Department of Labor, OSHA, n.d., para. 7), which describes the leading causes of worker death on construction sites, which were falls, followed by struck by object, electrocution, and caught/between. The construction industry has always been known to be dangerous and was responsible for 20.3% of all worker fatalities in U.S. private industry in 2013 (para. 8), though in its peak year of 2006, the industry employed just 7.7 million Americans (U.S. Department of Labor, 2013, Industry Employment section, para. 3). The Fatal Four were responsible for 58.7% of construction worker deaths in 2013 (US Department of Labor, OSHA, n.d., para. 8).

The Electrical Safety Authority of Ontario (ESA) noted in its 2010 report abstract that: “Table 2 also showed how dangerous electrical injuries are compared to other occupational injuries. The ratio of electrical fatality to non-serious injuries is 1:4 compared to a ratio of 1 to 755 with other occupational injuries” (p. 4). What this really states is that one out every four non-serious electrical injuries results in death, whereas this ratio is just 1 out of every 755 occupational injuries other than electrical results in death (p. 4).

Clearly the electrical trade is a hazardous trade, being the third leading cause of construction death, and was responsible for 9% of all US construction deaths in 2013 (US Department of Labor, OSHA, n.d.), while here in Ontario, we experienced eight occupational electrocutions, all electricians, in 2013 (Office of the Chief Coroner, Ontario, personal communication, January 15, 2015). On average, over the past 10 years, eight people have died every year from electrical contact in Ontario (Office of the Chief Coroner, Ontario, personal communication, January 15, 2015). While not all are occupational deaths, “occupational electrocutions outnumbered non-occupational electrocutions by a factor of 2:1” (ESA, 2014, p. 3). Further, ESA (2010) noted that during the period of 2000 to 2009:

Death and serious injury to the electrical trade has shown increase both in numbers and prevalence. Death to electricians between 2000 and 2004 accounted for 8% of all electrocutions in the workplace. Between 2005 and 2009, the prevalence jumped to 20% an increase of almost two folds. Totalling all serious injuries (fatalities and critical injuries) the number jumped from 5 to 30 for the same period, a six fold increase. (p. 1)

All electricians know the electrical trade is a hazardous one and take a great deal of pride in the fact that they work in this hazardous trade. This is important when reviewing the occupation of electricians. Over the past century, electricians have developed powerful heuristics, rules of thumb, in order to keep safe on the jobsite, and though many of the older electricians have been trained to “work live” on energized machinery equipment and panels, and although this practice is not allowed in most electrical work (power line workers must, in many cases, work live), live work is still the norm today (Howe, 2008). This may explain, in part, why live work is responsible for over 50% of all occupational death and injury due to electrical contact (ESA, 2014; Ontario Ministry of Labour [MOL], 2010).

### **Background for the Study**

Due to the unique personal, social, and organizational factors involved, veteran electricians who suffer debilitating occupational injuries or illness face significant barriers to getting hired into alternative occupations, specifically two occupations WSIB suggests they qualify for: electrical estimator and inspector. This study was commissioned in order to determine how is it that expert, veteran electricians who can no longer be an electrician due to illness or injury remain unemployed or underemployed, sometimes for as much as seven years post-injury.

### **Methodology and Methods**

The author held no a priori assumptions on retraining or back-to-work initiatives for electricians prior to undertaking this study. This study was a grounded theory research study with no prior hypothesis, but rather was aimed at finding out what I could about the transition an injured electrician goes through when moving from work with their hands to work with their minds. A phenomenological analysis of the participant interview data was applied, as it allows the voices of these injured workers to be shared with the reader in rich and deep detail (Rehorick & Bentz, 2008). The lived experience of those being forced to make a late-career occupational change due to illness or injury speaks to the barriers and challenges these workers face while trying to find new work and to create a new work identity—one that is “not electrician”.

A list of 19 electrical workers who have been injured and are attempting or have succeeded in making the transition to an inspector or electrical estimator was provided by the client, IBEW Local 353. The client sent an introduction letter to each participant encouraging research participation.

The semi-structured interview portion of this study (face-to-face and phone interviews) utilized 16 open-ended questions and was undertaken utilizing an appreciative inquiry framework so as not to bias the data and in order to help surface data that showed how the current retraining system for injured electricians is working in Ontario. Thirteen telephone interviews were conducted, each lasting a minimum of 45 minutes and a maximum of 1.5 hours. Additionally, one face-to-face interview was conducted, which lasted 2.5 hours.

Responses were hand recorded and verified for accuracy with each participant. Interview data were then aggregated onto large flip charts, which were reviewed and reflected upon again, in order to allow for meta data themes to arise. As noted, one particular participant requested a face-to-face interview in order to present, first-hand exhaustive amount of detailed paperwork this electrician had collected over seven years, showing details of telephone and email calls to potential employers, all to no effect. A comparison of the skills noted in the National Occupational Codes (NOC) for estimator and inspector (see Appendix A) suggest real gaps when compared to the research findings presented in this report.

### **Semi-Structured Research Questions**

1. How long were you employed as an electrician?
2. Why type of electrical work did you specialize in?
3. Were you the boss of your job or daily work?
4. Have you had previous management experience?
5. Were you self-employed or did you work for a company?
6. If you had your choice, would you rather work with your hands or your head?
7. What is your age?
8. Have you taken any non-technical professional development courses?
9. If so, what topics did they cover, and when did you take these courses?
10. Have you been injured at work?

11. If so, how did this happen, and how does this injury impact you today?
12. Do you feel your “status” has changed due to your injury?
13. What type of retraining was offered to you by WSIB?
14. What did you like about WSIB retraining you undertook?
15. If you transitioned to a new role, was it as an inspector or an estimator?
16. How did this transition go; did you have any problems or issues?

### Research Participants

Data gathered from participants were used to present the profile information in Table 2.

Table 2

#### *Research Participant Profile*

Profile Element	Description
Age	The average age of respondent was 53. The youngest was 32, and the oldest was 82 Gender: 12 respondents were male, and 2 were female
Occupational injury type	12 of the 14 participants were injured at work: two unspecified medical disability, one fall, one shoulder strain, one carpal tunnel injury (RSI), one abdominal muscle injury, one knee injury, and seven participants suffered serious back injuries
Experience and specialty	Twelve electricians were Industrial and Commercial electricians. One was a service tech electrician. One was a Commercial and Maintenance electrician
Management training/experience	Eleven of the 14 participants had taken no management training courses whatsoever. Three participants had prior management experience
Respondent’s preference for work with their hands versus their heads	13 participants responded unanimously that their preference was to work “with their hands.” One responded, “It’s sort of both: figure it out first, and then do it.”
Average number of “years on the tools”	Respondents had on average 24 years of experience as a qualified electrician
Combined years of experience	The 14 respondents had 341 years of electrician experience combined

### **Data and Findings**

These then are the lived stories of 14 subject matter experts who, due to occupational and non-work injury or illness, were forced to transition, or attempt to transition, to another occupation. It should not be lost on the reader that, combined, the 14 workers interviewed have 341 years of experience “on the tools,” as they refer to the trade of electrician.

The NOC 2234 guidelines for estimator (Human Resources and Skills Development Canada [HRSDC], 2015) make no mention of the fact that this is a time sensitive role or of the significant and proven computer skills required. Estimated bids must be comprehensive, accurate, detailed, and delivered on time. Based on the findings, the young men and women hired today as a junior estimator have advanced computer skills, enjoy office work, and can work well with deadlines. Veteran injured electricians face questions related to age, health, and computer skills or computer proficiency, as well as the required three years of experience and on-the-job training required to be considered for a junior estimator role.

In order to be considered for employment as a junior estimator, a worker must have at least three years of experience as an estimator simply to be considered a candidate for the position of junior estimator. Veterans say it takes a new estimator a full year just to get to know the system and then two additional years of practice. How then does a 52-year-old injured veteran electrician gain the three years of experience required in order to be considered for a junior estimator position?

The 2264 NOC guidelines for inspectors (HRSDC, 2013) make no mention of the 309A or 309D license required for this role, nor does it mention the wide range of transferable skills required, such as electrical contracting experience and knowledge of all types of electrical installations. Further, there is no mention of the computer, communications, management,



interviewing, report writing, relationship building, negotiation, dispute resolution, training, occupational health and safety, or risk education and awareness, along with other soft and hard skills required to be a successful inspector. The notion of transferable skill as outlined in the NOC documents mentioned above does not seem to match the realities of today's job market for veteran injured electricians, as there appears to be no natural work transition from electrical apprentice, to C of Q electrician, to junior electrical estimator.

There appears a more logical career pathway to becoming an electrical inspector "if you win the lottery," as several participants noted on the slim chances of being hired as an inspector, moving from electrical apprentice to a construction and maintenance electrician with management or supervisory experience, to an inspector role. However, as with the estimator role, many gaps in the experiences required for an electrician to transition to an inspector exist.

### **Quotable quotes**

"We have one of the finest apprentice training programs in Canada."

"Local (353) needs a training program for transitioning to other work."

"Took night courses, all kinds, to get more than 'normal' training."

"To become success: taking courses and advancement."

"No courses that applied to me, could not sit in front of a desk."

### **Impact of Injury Today**

Participants openly discussed feelings of loss of the high status and esteem they were once held in, loss of occupational identity as an electrician, worry, isolation, lack of confidence, depression, financial struggles, risk of bankruptcy, and an altered home life. Depression was mentioned consistently by all injured electrician as "attitude suffers," with some having to take

CAMH counseling to help with pain medication addiction (i.e., seven to eight different drugs and medications).

### **Quotable quotes**

“Took a huge pay cut: \$40.00 to \$15.00 an hour, with a family mortgages, taking care of in-laws with dementia.”

“I worked injured for 2 ½ years, and I would not suggest anyone do that again.”

“Pressure to stay on the job because bosses don’t want a loss time claim.”

“I have no computer skills.”

“Psychological issues were mentioned frequently.”

“Start at the bottom.”

“Losing a great deal of self-respect, respect of family and friends”

“Financial hardship, bankruptcy”

“First ever job interview I went to in my whole life”

“If your hurt, don’t go back to light duty”

“Being a construction worker (electrician), you’re first a number.”

### **On Injury Transition to Another Job and Career**

Participants were consistent when they mentioned the impact of ageism and lack of relevant on-the-job training and skills as hindering their goal of securing paid work commensurate with their significant past experience and prior knowledge of the electrician trade.

- Two workers had transitioned to electrical inspector (both injured)
- Two workers had transitioned to estimator (one injured at work, one not)

The remaining 10 participants are still trying to transition to meaningful work and to secure benefits coverage. Some have been trying to secure employment for as long as seven

years. Many commented on the fact that their hourly wage went from \$40.00 to \$15.00, if they could secure a job offer.

### **Quotable quotes**

A significant stressor was frequently noted: “Upon completion of a course or passing a test or exam, either the insurer or WSIB would cut off benefits.”

“If I had failed the test, insurance benefits would have continued.”

“I liked getting things done at the end of the day. I could say I helped build T3 or Leslie Substation.”

“Always look at the opportunities I had seen on the outside and wanted to train for the office”

“Being super-flexible is the KEY to opportunities.”

“Not a good experience”

“Don’t say anything if you are injured.”

“Father was an electrician, I had no backup.”

“I would rather work outside in life and death than deal with this [inside work].”

“I am worried I will not be able to make good money.”

“Company forgot about me when I was injured.”

### **When Asked Specifically What They Liked About WSIB Retraining**

Several participants stated they had a good working relationship with WSIB staff, though this has not led to gainful work. Several commented on the occupational testing they underwent; many discussed the retraining they undertook in order to attempt to secure new employment: specifically, Estimating 1 and 11 offered at local colleges. What is important to note are the confusion, disbelief, and frustration “at the system” for retraining highly skilled, very experienced electricians, who for reasons of occupational injury or illness, are forced into looking to retrain for another career.

**Quotable quotes**

One common refrain was: “Why am I told to mention nothing about my disability (in job interviews), or that I am on WSIB?” “What do I say when they ask what I did for those seven years? . . . . Tell them it was personal time?”

“How can anyone relate to what I went through these last seven years?”

“WSIB dealings were cold.”

“WSIB does not facilitate any healing: dropped my case three months ago, dropped it three times before.”

“Thought they were going to retrain me for an estimator’s job, not got a shot!”

“Told me not to mention injuries or on WSIB, what about the 72-month hole in my resume?”

“There is no light duty as an electrician, because if you can’t do the entire job, you can’t do it.”

“Who is going to hire an injured 52-year-old electrician?”

“The roles I can fill are limited.”

“I knew from the time I was 14, I was going to be an electrician.”

“Many workers had a father who was an electrician.”

“Felt like you were alone”

“Don’t have the experience, not knowing what the others do”

“The first question they ask you [in a job interview] is how old you are or how many years in the trade?”

**Did You Experience a Change in Status?**

Twelve out of 14 participants stated they had experienced a significant drop in work status. With 13 of the 14 stating they experienced a significant reduction in confidence and a commensurate increase in stress. “Start at the bottom” was a common refrain used to describe

their transition to new work and a new identity, if they were lucky or well prepared enough to find a new career.

### **Quotable quotes**

Participants noted a change in status to something less than they held prior to injury, with comments such as:

“Changed me 100%. I will not be the way I was before.”

“Confidence is shot.”

“Six years trying to find a job; it’s difficult to keep up with the young guys.”

Most stated a significant level of discomfort:

“My doctor did not want to see me after a few years and did not want to fill out the reports or do the tests that the WSIB and the insurance company need.”

“It’s like you are almost, like you are ashamed.”

“Hate being towed to an office”

“Can’t give up being a construction [electrical] worker; am not an office person.”

“I knew since I was 17, I was going to be an electrician.”

### **Retraining Offers and Suggestions**

Universally, all 14 participants would prefer, to this day, to be employed in the field as an electrician: “I wanted *only* to be back in the field.” One 32-year-old participant received six suggestions from WSIB for a new career, which included PLC’s Robotics, Electrical Engineer, Inspector, Estimator, or Foreman. However, several participants noted that “no retaining was offered other than for estimator, and WSIB would not approve management training courses.”

### **Quotable quotes**

“Retrain me with things, with tools”

“Can retrain to an electrical estimator or to become an electrical inspector, much retraining was at night school; Estimator 1 and 11, etc. was offered to many.”

“Insurance Company offered three retraining roles: estimator, inspector, and general contractor foreman.”

“Not every electrician can do office work.”

“If adamant about remaining in the field, fight tooth and nail”

### **On Transition to an Electrical Estimator Role**

All study participants, save two, noted the extreme difficulty they faced in finding gainful employment as an estimator. The eldest participant as well as one of the youngest electricians said, in so many words, that these transitions are easy. It takes six things: attitude, skills, experience flexibility, constant retraining, early experience with computers and office work. If any were offered junior estimating positions, the pay was noted as being \$15.00 an hour, not the \$40.00 per hour they were paid as electricians.

The majority of junior electrical estimator positions posted on various job sites ask for at least three years of experience in addition to other skills in order to be considered as a junior estimator (see Appendix B: Junior Electrical Estimator and Appendix C: Job Description Ontario Hydro Electrical Inspector). One of the key barriers for veteran electrician becoming reemployed as a junior estimator is the standard request for three years of experience as an electrical estimator. For a 50-year-old electrician who has never worked in the office, how likely is it they will be able to be hired in order to secure the required three years of prior estimating experience?

### **Quotable quotes**

“Can’t do the job I used to”

“Guy could not make the transition to the office”

“Doing something totally foreign with being an electrician”

“Only opportunities might be entry level estimator, not willing to pay C of Q wages; they want me to take a huge pay cut! No physio, no benefits.”

“Worked for a year in pain nine hours a day and not healing”

“Under train you, don’t factor in age”

“Estimating is accounting! Train them with tools not to be an accountant”

“Depending on the age, some are capable of doing it.”

“Lacking computer skills, 62, injured; who will hire me as an estimator?”

“Who is going to hire me at age 50, injured?”

“We are used to fixing problems, not doing accounting!”

One senior electrical estimator, who has a degree in political science, became an electrician, was in the army, had automotive manufacturing experience, taught estimating courses at college, and early on in his career (5th apprentice term), sought out estimating training. As an estimator and purchaser, he noted the following over a 2-hour interview:

“I have tried very bright and talented young and older workers, and many cannot make the transition to estimator.”

“This is a high-stress job, on your own most of the time, and you must meet the deadlines, with accuracy!”

“Other guy: good foremen, good project manager, could not make the adjustment”

“There are two types of personalities; if the WSIB thinks anybody can be an estimator, they are dead wrong!”

“Some can do the job, some can’t. Some do choose this, some don’t.”

“Need the right mindset.”

“Self-motivated, like being on one’s own, accepting a task.”

“Some can’t deal with the people, can’t deal with the office, can’t deal with stress: real deadlines.”

“The young kids are so advanced with computers and Accubid; they have the advantage of growing up with computers.”

“It will take a junior electrical estimator one year to simply get comfortable, though they would need three years of experience to be considered a junior estimator.”

“A senior estimator would need 5 to 10 years of experience to be considered and to be successful; you need determination, confidence, self-motivation.”

This senior estimator’s advice to electricians is as follows:

“Always look for opportunities.”

“If you had seen the outside, and I had the exposure to the office early on, I wanted to train for an in-office job and was good with computers, manage numbers well, with Army and large automotive manufacturer experience. . . . but to transition, you must have office skills, skills for dealing with stress, deadlines.”

“For example, pricing a fire alarm job: you have to think of ‘the whole job’, you are under the gun: time pressure to submission date.”

“You have to be able to and must read all the documents; it’s critical, if they don’t know computers well.”

“Depending on the age, some are not capable of doing well in training for Estimator 1 and 11.”

“In my estimation, you have to be able to do the whole thing, the entire job, fast, thorough, and well.”

“One electrician I know who was injured: very good with computers, very good with tools . . . could not see the whole thing, could not see the whole project, the whole bid, and could not follow up with suppliers. You have to be on them, would finally get the estimates the day bid was due.”

Other comments on a transition to estimating included:

“This guy I know gave me an interview for a junior estimator job. He took one look at me and asked: take a look at any of those prints [blueprints] and tell me how long it would take you to work up an estimate? He then said, ‘Never mind; I’ll tell you. It will take you 1½ days for each one.’ I said, ‘That’s being kind to me,’ and he said, ‘I have a kid who can do one of those in 45 minutes, with no mistakes.’”

“Estimators must be self-motivated, work mainly on your own, with deadlines.”

“Need right mindset.”

“Estimators are very specific about skills required: detail oriented, experience, follow up, accuracy, work with deadlines, see whole picture, great with computers.”



### **On Transition to an Inspector Role**

The inspectors interviewed enjoy their role and the varied requirements of day-to-day tactical and strategic work. They noted the absolute need to keep current on a wide range of legal, police, code, enforcement rules, regulations, and guidelines, and so this activity plays a significant role in their daily workload. They noted the need for strong communications skills, and that a wide range of knowledge on many different types of electrical construction, installation, and repair are required. Physical strength and flexibility are important in order to be able to inspect all types of job sites. Strong interpersonal skills, management skills, and experience are also required. These highly skilled, experienced, and veteran electricians, who have managerial experience and who become safety inspectors licensed by the province, are equally unique, as they must be able to deal in a dynamically complex world inspecting job sites, issuing work orders, and stopping work orders while dealing with difficult situations.

#### **Quotable quotes**

“Was lucky to make the transition to inspector at the right time.”

“Inspectors need management skills.”

“Not every person can step over [to inspector]; must have the personality, talk, talk, talk, always on the go.”

“Seem to hire Masters who were contractors.”

“ESA sees a 1,000 resumes, hires five.”

“Interviews and tests went great, scored well, then no thanks.”

#### **Summary**

The notion of occupational justice (Ryski & Arnold, 2005; Townsend & Wilcock, 2004;) was missing for 12 of the 14 electricians, as it related to the barriers they face in securing well-paid work with “their hands” based on their prior knowledge and past experience as expert

electricians. The lived experiences of 341 years on the tools, as shared by these research participants, confirmed the difficulties veteran injured electricians face as they attempt to transition to new work.

I repeat, the results of this study are not to be read as a blame game because of the dynamic complexity, which is not a simple or linear complexity of the entire electrical trade, from apprentice selection and training through to dealing with a 58-year-old electrician who has 30 years on the belt and now has a debilitating injury. There are numerous gaps in data, knowledge, and process throughout the entire system, and so any attempt to lay blame will not help these injured workers.

Rather, listen to the collected, lived experience of one injured veteran electrician describing the significant change to his occupational identity once he was injured:

I was a highly skilled, very experienced electrician, who until injured, had a stable family environment, status, respect, a healthy income, job satisfaction, high community esteem and respect, rich camaraderie amongst fellow electricians, high regard and respect from other trades, engineers, and general contractors. . . . Now, not so much.

Today, the representative sample of veteran injured electricians utilized for this study struggle to find a new occupation and a new occupational identity doing work that is “not as an electrician,” which are not desirable for a host of reasons, which include income reduction up to 60% in some cases, unpredictable health benefit coverage, and taking on new college level training—in most cases with skepticism as to the value of such training, though participants realized they require this new training.

If the 19 clarifying questions presented in this section were to be answered carefully by all stakeholders, this would lead to permanent change in the organizational system surrounding skills retraining for injured veteran electricians.

### Clarifying Questions

Clarifying questions about the return to work system affecting injured veteran electricians were developed from Ulrich and Reynolds (2010) and included the following:

1. Who is (*out to be*) the client/customer?
2. What is (*ought to be*) the purpose of the system(s) we are dealing with?
3. What is (*ought to be*) the system's measure of success?
4. Who is (*ought to be*) the decision maker (power to change what gets measured)?
5. What conditions/components are (*ought to be*) controlled by the decision maker?
6. What conditions/components are not (*ought not to be*) controlled by the decision maker? (e.g., the decision-maker's environment)
7. Who is (*ought to be*) actually involved as planning/design of the system?
8. Who is (*ought to be*) involved as expert? What kind of expertise?
9. Who is (*ought to be*) the guarantor's of the system (those who guarantee to support implementation based on political, theoretical, and empirical evidence)?
10. Who may be affected, without being involved (who of the affected ought to be involved)?
11. In what ways are (*ought*) those affected given the chance of improvement (emancipation) from the premises and promises of the involved (e.g., the experts)?
12. What worldview is (*ought to be*) actually underlying the design of the system?

**Additional Clarifying Questions**

13. How can the system best transition with dignity, a fair wage, and most importantly the opportunity to work with her or her hands those highly skilled, experienced, and specialized electricians once a debilitating injury takes place?
14. Can we expand the notion of suitable occupation for injured electricians?
15. What types of new, college level apprentice training could be developed into a curriculum to help apprentices create proficiency, credits, and training in estimating, or inspecting, early on, and throughout their careers?
16. What can be done to rebuild the occupational identity of mature, expert adults who have worked in dangerous trades, and are then forced to career change late in life?
17. How do C of Q electricians understand and assess their own professional development needs?
18. How do expert trade workers come to know, or understand what new roles they could transition to after suffering a debilitating injury, or illness?
19. How do expert trade workers gain the skills they need to transition to new roles when these skills can only be learnt on the job and not in classroom?

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## Appendix A: NOC Codes 2264 and 2234

### 2264 Construction inspectors<sup>1</sup>

Construction inspectors inspect the construction and maintenance of new and existing buildings, bridges, highways and industrial construction to ensure that specifications and building codes are observed and monitor work site safety. They are employed by federal, provincial and municipal governments, construction companies, architectural and civil engineering consulting firms or they may be self-employed.

#### Example Titles

bridge inspector  
building construction inspector  
construction inspector  
highway construction inspector  
home inspector  
housing construction inspector  
mine inspector, construction  
plumbing inspector  
pre-stressed concrete inspector  
safety officer – construction

#### Main duties

Construction inspectors perform some or all of the following duties:

- Examine plans, drawings, and site layouts for new buildings, building renovations and other proposed structures
- Inspect construction of buildings, bridges, dams, highways and other types of building and engineering construction for conformance to drawings, specifications, building codes or other applicable ordinances
- Inspect and test electrical or plumbing installations in buildings to ensure compliance with municipal, provincial and federal regulations
- Inspect steel framework, concrete forms, reinforcing steel mesh and rods, concrete or pre-stressed concrete to ensure quality standards and to verify conformance to specifications and building codes
- Inspect construction of sewer systems and pipelines
- Inspect construction sites to ensure that safe working conditions are maintained
- Inspect existing buildings to identify and report on structural defects, fire hazards and other threats to safety

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<sup>1</sup> 2264 *Construction inspectors*, by Human Resources and Skills Development Canada, 2013, December 16. Retrieved from <http://www5.hrsdc.gc.ca/NOC/English/NOC/2011/ProfileQuickSearch.aspx?val=2&val1=2264>

- Inspect new or resale homes on behalf of clients and assess and provide reports on the physical condition of property.

**Employment requirements**

Completion of secondary school is required.

- A college diploma in construction, civil engineering or architectural technology plus several years of related work experience  
*or*  
Several years of experience as a qualified tradesperson in a construction trade, such as plumbing, carpentry or electrical trade are required.
- Provincial certification in a skilled trade or as an engineering technologist is usually required.
- Leadership in Energy and Environmental Design (LEED) certification is offered by the Canada Green Building Council and may be required by some employers.

**Additional information**

Progression to construction management positions is possible with experience.

**Classified elsewhere**

- By-law enforcement and other regulatory officers, n.e.c. (4423)
- Construction estimators (2234)
- Construction managers (0711)
- Engineering inspectors and regulatory officers (2262)
- Inspectors in public and environmental health and occupational health and safety (2263)



**2234 Construction estimators<sup>2</sup>**

Construction estimators analyze costs of and prepare estimates on civil engineering, architectural, structural, electrical and mechanical construction projects. They are employed by residential, commercial and industrial construction companies and major electrical, mechanical and trade contractors, or they may be self-employed.

**Example Titles**

chief estimator – construction  
construction estimator  
cost estimator – construction  
principal estimator – construction  
professional quantity surveyor  
quantity surveyor – construction

**Main duties**

- Construction estimators perform some or all of the following duties:
- Prepare estimates of probable costs of materials, labour and equipment for construction projects based on contract bids, quotations, schematic drawings and specifications
- Advise on tendering procedures, examine and analyze tenders, recommend tender awards and conduct negotiations
- Establish and maintain tendering process and set up cost monitoring and reporting systems and procedures
- Prepare cost and expenditure statements and forecasts at regular intervals for the duration of a project
- Prepare and maintain a directory of suppliers, contractors and subcontractors
- Liaise, consult and communicate with engineers, architects, owners, contractors and subcontractors, and prepare economic feasibility studies on changes and adjustments to cost estimates
- Manage and co-ordinate construction projects and prepare construction progress schedules.

*Estimators may specialize in estimating costs for structural, electrical or mechanical construction projects.*

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<sup>2</sup> 2234 *Construction Estimators*, by Human Resources and Skills Development Canada, 2015, March 18. Retrieved from <http://www5.hrsdc.gc.ca/NOC/English/NOC/2011/QuickSearch.aspx?val65=2234>

**Employment requirements**

- Completion of secondary school is required.
- Completion of a three-year college program in civil or construction engineering technology  
or  
Several years of experience as a qualified tradesperson in a construction trade such as plumbing, carpentry or electrical, are required.
- Certification by the Canadian Institute of Quantity Surveyors is usually required.

**Additional information**

Progression to more senior positions in this unit group, such as senior estimator or to construction management positions is possible with experience.

**Classified elsewhere**

Architectural technologists and technicians (2251)  
Civil engineering technologists and technicians (2231)  
Civil engineers (2131)  
Construction managers (0711)

**Appendix B: Junior Electrical Estimator (2 examples)****Example 1: Job Description: Junior Electrical Estimator  
2015, (for a major national construction company)****Responsibilities:**

As a member of a dynamic team of professionals, primary responsibilities for the successful candidate include:

- Interpreting isometric, as-built, and engineering drawings
- Maintaining electronic and hard copy files
- Preparing quantity take-offs, reports, and presentations
- Soliciting, retrieving, and consolidating information from various sources
- Supporting the overall bid preparation and tendering process
- Building positive internal and external client relations

**Qualifications:**

Applicants interested in joining our company must have at least 3 years experience in construction estimating, as well as:

- A post-secondary electrical or instrumentation engineering program degree or diploma
- Familiarity with the Canadian Electrical Building Code
- The ability to work in a busy team environment
- Great attention to detail and the ability creatively solve problems
- Proficiency with the various Microsoft Office applications

Consideration will also be provided for those with an extensive electrical/instrumentation trade background.

**Working Conditions:**

Candidates must be able to work extended hours.

**Example 2: Junior Electrical Estimator Job Description**

**Estimator:** primary responsibilities for the successful candidate includes:

- Preparing quantity take-offs, reports, and presentations
- Soliciting, retrieving, and consolidating information from various sources
- Supporting the overall bid preparation and tendering process
- Building positive internal and external client relations

Applicants interested in joining our company must have at least 3 years experience in construction estimating, as well as:

- A post-secondary electrical or instrumentation engineering program degree or diploma
- Familiarity with the Canadian Electrical Building Code
- The ability to work in a busy team environment
- Great attention to detail and the ability creatively solve problems
- Proficiency with the various Microsoft Office applications

Consideration will also be provided for those with an extensive electrical/instrumentation trade background.

**Appendix C: Job Description Ontario Hydro Electrical Inspector****ONTARIO HYDRO ELECTRICAL INSPECTION  
ELECTRICAL INSPECTOR - JOB DESCRIPTION****Technical**

1. Inspect, assess and make skilled decisions on electrical installations in all types of residential, agricultural, commercial, and industrial facilities, including substations, for compliance with the Ontario Electrical Safety Code as well as for the prevention of electrical fires and shocks. This includes new installations, alterations, maintenance, renovations and repairs as well as reviewing and commenting on high and low voltage drawings, plans and specifications for compliance with the Electrical Safety Code.
2. Inspect and approve electrical devices as necessary applying the appropriate standard(s).
3. Attend court or Coroner's Inquests as required.
4. Maintain a specialized knowledge of products and wiring methods within the electrical industry through seminars, trade literature, training sessions. Attend training seminars to maintain skills and knowledge required to effectively perform the job.

**Public Safety**

5. According to Electrical Inspection's policy on fire investigation, investigate and file reports on fires suspected of being electrical in origin. Investigate and complete reports on electrical accidents.
6. Initiate charges under the Power Corporation Act where necessary in the performance of electrical inspection.
7. Identify and take necessary action to eliminate electrical hazards found during the course of daily inspection activities.
8. Promote public safety by participating in and making presentations to various groups and contractor organizations.

**Market Development/ Surveillance**

9. Monitor the market place for unapproved electrical devices and take appropriate action to prevent the use, sale, disposal or display of same.

